The Park Service considered other potential revisions to operating requirements meant to simplify the regulations in other alternatives in the EIS, but these were not included in this decision for the following reasons:

Measurement of Vessel Speed. Alternative 5 in the EIS includes a change in the way speed is measured, from "through the water" to "over the ground." Many private vessel operators use Global Positioning System technology to monitor their speed, and this change was included to reflect how many vessel operators now measure their speed. However, using ground speed does not account for currents, and Glacier Bay is known for extreme currents. For example, if a vessel travels against a 6-knot current, the vessel's speed through the water would be 6 knots faster than ground speed, and moving with such a current, a vessel's speed through the water would be 6 knots slower than ground speed. It was determined that this system of measurement could result in a hazardous situation in an extreme current. In addition, studies of vessel speed and its effects on humpback whales in Glacier Bay use speed as measured "through the water" rather than "over the ground." Continuing to measure speed as "through the water" will ensure comparability of study results. Taking these factors into consideration, speed will continue to be measured as "through the water."

<u>Vessel Routes</u>. Alternative 4 in the EIS included defined cruise ship routes as a way to reduce exposure of shorelines to the sight and sounds of cruise ships. However, the Park Service determined that defined cruise ship routes are not necessary, except in designated whale waters. In general, cruise ship operators travel in mid-channel and are required to have professional marine pilots on board, and the Park Service has found no reason to establish a new requirement.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

Alternative 4, identified as the environmentally preferred alternative in both the DEIS and FEIS, includes closure of more waters to cruise ships and tour vessels and provides more protection of resources through revised operating requirements than the other alternatives considered. In addition, by allowing the fewest numbers of cruise ships, tour vessels, and charter vessels, alternative 4 would provide for the lowest number, intensity, and duration of adverse effects to natural resources in Glacier Bay and Dundas Bay.

Vessel Quotas

Alternative 4 calls for the greatest reduction in cruise ships and tour and charter vessels in Glacier Bay of the alternatives considered in the FEIS and regulates vessel traffic in Dundas Bay. Under alternative 4, seasonal limits would change from June through August as follows:

- a 33% reduction in cruise ship seasonal entries (from 139 to 92).
- a 33% reduction in the daily quota for tour vessels (from three to two) and a 33% reduction in seasonal-use days (from 276 to 184).
- a 17% reduction in the charter vessel daily vessel quota (from six to five) and a 17% reduction in charter vessel seasonal-use days (552 to 460)
- a 12% reduction in the private daily vessel quota (from 25 to 22)
- a 3% increase in private vessel seasonal-use days (from 1,971 to 2,024), due to the elimination of the seasonal entry quota.

In addition, alternative 4 would expand seasonal limits to include May and September, which would result in a 50 per cent reduction in cruise ships and a 33 per cent reduction in tour vessels during May and September, compared to the current situation. Daily limits for charter and private vessels also would be restricted in May and September to five and 22 vessels, respectively. Currently, no limits are set for charter or private vessels during May and September.

Under alternative 4, Beardslee Entrance and most of the East Arm in Glacier Bay, and Dundas Bay would be closed to cruise ships and tour vessels to protect sensitive resources and provide additional opportunities for small boat visitors to experience these areas without the presence of larger vessels. In addition, Fingers and Berg Bays in Glacier Bay would be closed to tour vessels. Charter vessels would be limited to three per day and 460 seasonal-use days from May through September. No limit would be placed on private vessels.

Vessel Operating Requirements

<u>Vessel Speed.</u> Placing speed limits on vessels is one of the main methods the Park Service uses to reduce the risk of vessels colliding with marine life. Underwater noise level also is related to vessel speed; lower speed equates to less underwater noise.

Vessel speed regulations would change in two fundamental ways under alternative 4. First, vessel speed limits would be based on vessel length. A year-round speed limit of 13 knots through the water would be placed on all vessels greater than or equal to 262 feet (80 meters) to reduce risks of vessel collisions with whales. Second, the timeframe for speed limits in whale waters (lower Glacier Bay only) would be extended to May 1 through September 30 (currently May 15 through August 31) to protect humpback whales that are present in this area throughout this timeframe. Motorized vessels less than 262 feet (80 meters) long would be prohibited from operating at more than 20 knots in lower Glacier Bay whale waters from May 15 through September 30. Under this alternative, all motor vessels would be subject to operating at no more than 10 knots through the water when the superintendent has designated a maximum of 10 knots because of the presence of whales. The regulatory language would read as follows:

From May 1 through September 30 in the designated whale waters of the lower Bay, as defined above, for vessels less than 262 feet (80 meters) in length, the following is prohibited:

1) Operating at more than 20 knots speed through the water. 2) Operating at more than 10 knots speed through the water, when the superintendent has designated a maximum speed of 10 knots (due to the presence of humpback whales in the area).

For vessels 262 feet (80 meters) or greater in length, the following is prohibited: 1) Operating at more than 13 knots speed through the water, everywhere within Glacier Bay. 2) Operating at more than 10 knots speed through the water when the superintendent has designated a maximum speed of 10 knots (due to the presence of humpback whales in the area).

Whale Waters. Designated whale waters would be lower Glacier Bay waters only from May 1 through September 30. In addition, the superintendent also may designate any portion(s) of Glacier Bay and Dundas Bay as temporary whale waters and impose motor vessel speed restrictions in whale waters.

<u>Vessel Routes and Destinations</u>. Routes for cruise ships in Glacier Bay would be defined to provide more assurance of resource protection, provide a potentially improved backcountry visitor experience, better separate the various vessels in Glacier Bay, and provide an increased margin of safety for avoidance of nearshore collisions. A cruise ship route would be identified using the current typical cruise ship traffic pattern (generally in mid-channel).

Cruise ships would be allowed to go into the West Arm, into Tarr Inlet, and up to Jaw Point in Johns Hopkins Inlet. In addition to the closed waters defined in current regulations, cruise ships also would not be allowed in Beardslee Entrance or the East Arm (defined by a line drawn from southern Sebree Island to the mainland) in Glacier Bay or in Dundas Bay.

Tour vessels would not be allowed in Beardslee Entrance, Muir Inlet (defined by a line from Muir Point to the mainland), Berg Bay, or Fingers Bay in Glacier Bay or in Dundas Bay.

<u>Johns Hopkins Inlet Seasonal Closure.</u> Under alternative 4, motorized vessels would be required to maintain a 0.25 nautical mile distance from seals hauled out on ice in Johns Hopkins Inlet on a year-round basis.

MEASURES TO MINIMIZE HARM

Many of the operating requirements considered in the EIS are, in fact, measures that minimize harm. The 1996 decision to increase vessel numbers also included many measures to reduce or avoid effects on the resources and values of Glacier Bay. These are defined in the form of vessel operating requirements and are in regulations (36 CFR 13.65), which will continue to be in effect.

Some measures to protect park resources and values included in the current regulations are as follows:

- Non-motorized waters allow backcountry visitors to experience areas of the park without the presence of motorized vessels.
- Regulations protecting vessel speed and approach to humpback whales mitigate potential disturbance to whales, allowing these species enhanced opportunities to forage and travel than would be the case without the regulations.
- The superintendent may designate temporary whale waters and impose motor vessel speed restrictions in whale waters, which provides protection to this endangered species.
- Islands and rocks with nesting seabirds that are closed to close vessel approaches on a year-round basis provide protection of marine bird nesting habitat from vessels and visitors.
- Steller sea lion and harbor seal haul-outs that are closed to close vessel approaches on a yearround and seasonal basis provide protection to the Steller sea lion and harbor seal populations from vessel and visitor disturbance.

Other measures currently in place that also contribute to environmental protection are included in cruise ship concession permits. For example, cruise ship operators submit a pollution minimization plan that documents how each operator implements the industry's Best Management Practices to minimize pollution to air and water and prevent discharges of fuel or other undesirable substances. This has resulted in cruise ship operators submitting pollution minimization plans that incorporate a zero discharge policy for graywater or blackwater. Cruise ship operators also may include in their plan a provision to turn off incinerators while in the park, which eliminates a source of air pollution. If operators discharge fuel or wastewater, the park can take action through criminal or administrative procedures, depending on the severity of the spill or discharge, the appropriateness of the operator's response, and/or cooperation with the park and other agencies.

Environmental practices also are taken into consideration during the evaluation of proposals for tour and charter operators during the concession prospectus process.